AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1.   (Currently Amended)   A method of determining a hybrid text summary comprising the steps of:

determining discourse constituents for a text;

determining a structural representation of discourse for the text;

determining relevance scores for the discourse constituents based on at least one non-structural measure of relevance;

percolating the relevance scores based on the structural representation of discourse; and

determining a hybrid text summary ~~based on discourse constituents with relevance scores compared to a threshold relevance score~~.

2.   (Currently Amended)   The method of claim [[1]] 5, wherein the structural representation of discourse is determined based on a theory of discourse analysis.

3.   (Original)   The method of claim 2, wherein the theory of discourse analysis is at least one of the Linguistic Discourse Model, the Unified Linguistic Discourse Model, Rhetorical Structure Theory, Discourse Structure Theory and Structured Discourse Representation Theory.

4.   (Currently Amended) The method of claim [[1]] _5_, wherein non-structural

measures of relevance are determined based on at least one of statistics, keywords, knowledge

bases.

5.   (Currently Amended) ~~The method of claim 1,~~ A method of determining a hybrid

text summary comprising the steps of:

determining discourse constituents for a text;

determining a structural representation of discourse for the text;

determining relevance scores for discourse constituents based on at least one non-

structural measure of relevance;

percolating relevance scores based on the structural representation of discourse; and

determining a hybrid text summary based on discourse constituents with relevance scores

compared to a threshold relevance score,

wherein percolating the relevance scores comprises the steps of:

for each child discourse constituent node in the structural representation, assigning the

relevance score of the child discourse constituent node to the parent discourse constituent node if

the child discourse constituent node is more relevant;

for any subordinating nodes, assigning the relevance scores of the subordinated discourse

constituent to the subordinating discourse constituent if the subordinated discourse constituent is

more relevant; and

for any coordination nodes, assigning the relevance score of the most relevant child to

other child discourse constituent nodes.

6.   (Currently Amended) ~~The method of claim 1,~~ A method of determining a hybrid text summary comprising the steps of:

determining discourse constituents for a text;

determining a structural representation of discourse for the text;

determining relevance scores for discourse constituents based on at least one non-structural measure of relevance;

percolating relevance scores based on the structural representation of discourse; and

determining a hybrid text summary based on discourse constituents with relevance scores compared to a threshold relevance score,

wherein percolating the relevance scores comprises the steps of:

for each child discourse constituent node in the structural representation, assigning the relevance score of the child discourse constituent node to the parent discourse constituent node if the child discourse constituent node is more relevant than its parent;

for each coordinated discourse constituent node, assigning the relevance score of the coordinated discourse constituent node to each preceding less relevant sibling node; for each child discourse constituent node that is not a coordinated discourse constituent node and is not a subordinated discourse constituent node, assigning the relevance score of the parent discourse constituent node to the child discourse constituent node if the parent discourse constituent is more relevant than the child;

for each coordinated discourse constituent node, assigning the relevance score of the parent discourse constituent node to the coordinated discourse constituent node, if the coordinated discourse node and all its siblings are less relevant than the parent node;

for each subordinated discourse constituent node, assigning the relevance score of the subordinated discourse constituent node to the subordinating discourse constituent if the subordinated discourse constituent is more relevant than the subordinating node; and

for each node, repeating these steps, until no node can be found whose relevance score is changed to the relevance score of another node.

7.   (Original) The method of claim 6, wherein the percolation of relevance scores is applied to progressively larger sets of linked nodes.

8.   (Original) A method of determining a hybrid text summary comprising the steps of:

determining discourse constituents for a text;

determining a structural representation of discourse for the text;

determining relevance scores for discourse constituents;

percolating relevance scores based on the structural representation of discourse comprising the steps of:

for each discourse constituent leaf node, determining the number of subordinated edges plus one;

determining a score based on the inverse of the number of subordinated edges +1;

for each discourse constituent node, assigning the score of a child discourse constituent node to the parent discourse constituent node, if the score is less relevant;

for any subordination discourse constituent node, assigning the score of the subordinated discourse constituent node to the subordinating discourse constituent node if the subordinated discourse constituent score is lower;

assigning the relevance scores of any coordination discourse constituent node to each child discourse constituent of the coordination if it is lower;

determining an adjusted relevance score based on the score and the subordination level; and

determining a hybrid text summary based on discourse constituents with relevance scores compared to a threshold relevance score.

9.   (Currently Amended) The method of claim [[1]] 5, further comprising the steps of:

determining every leaf discourse constituent containing an anaphor;

for each anaphor, determine any unique antecedent referents for the anaphor;

substituting the unique antecedent referent into the leaf discourse constituent for the anaphor;

removing the discourse constituent containing the unique antecedent referent from the set of the discourse constituents with relevance scores more relevant that the threshold relevance score.

10.   (Currently Amended) The method of claim 1, wherein percolation of relevance scores comprises the steps of:

determining important discourse constituents ~~constituent nodes~~, the relevance scores of the important discourse constituents exceeding an importance threshold value;

determining unresolved anaphors of the important discourse constituents;

determining potential resolving discourse constituents containing potential antecedent referent ~~with potential to resolve~~ of the unresolved anaphors;

percolating the relevance score of the important discourse constituents through ~~a reduced span of~~ the potential resolving discourse constituents; and

determining a ~~reduced~~ modified span of the important discourse constituents based on the relevance score.

11.   (Original) A system for determining hybrid text summaries comprising:

an input/output circuit for retrieving a text;

a processor for determining discourse constituents for the text and attaching the discourse constituents into a structural representation of discourse;

a relevance score determination circuit for determining relevance scores for the discourse constituents based on at least one non-structural measure of relevance;

a percolation circuit for percolating discourse constituent relevance scores based on the structural representation of discourse; and

where the processor determines a hybrid text summary based on the discourse constituents with relevance scores exceeding a threshold relevance score.

12.   (Currently Amended) The system of claim [[11]] 15, wherein the structural representation of discourse is determined based on a theory of discourse analysis.

13.   ·(Original) The system of claim 12, wherein the theory of discourse analysis is at least one of the Linguistic Discourse Model, the Unified Linguistic Discourse Model, Rhetorical Structure Theory, Discourse Structure Theory and Structured Discourse Representation Theory.

14.   (Currently Amended) The system of claim [[11]] _15_, wherein non-structural measures of relevance are determined based on at least one of: statistics, keywords, knowledge bases.

15.   (Currently Amended) ~~The system of claim 11,~~ A system for determining hybrid text summaries comprising:

an input/output circuit for retrieving a text;

a processor for determining discourse constituents for the text and attaching the discourse constituents into a structural representation of discourse;

a relevance score determination circuit for determining relevance scores for the discourse constituents based on at least one non-structural measure of relevance; and

a percolation circuit for percolating discourse constituent relevance scores based on the structural representation of discourse and where the processor determines a hybrid text summary based on the discourse constituents with relevance scores exceeding a threshold relevance score,

wherein, for each child discourse constituent node in the structural representation, the percolation circuit assigns the relevance score of the child discourse constituent node to the parent discourse constituent node if the child discourse constituent node is more relevant;

for any subordinating nodes, the percolation circuit assigns the relevance scores of the subordinated discourse constituent to the subordinating discourse constituent if the subordinated discourse constituent is more relevant; and

for any coordination nodes, the percolation circuit assigns the relevance score of the most relevant child to other child discourse constituent nodes.

16.   (Currently Amended) ~~The system of claim 11,~~ A system for determining hybrid text summaries comprising:

an input/output circuit for retrieving a text;

a processor for determining discourse constituents for the text and attaching the discourse constituents into a structural representation of discourse;

a relevance score determination circuit for determining relevance scores for the discourse constituents based on at least one non-structural measure of relevance; and

a percolation circuit for percolating discourse constituent relevance scores based on the structural representation of discourse and where the processor determines a hybrid text summary based on the discourse constituents with relevance scores exceeding a threshold relevance score,

wherein for each child discourse constituent node in the structural representation, the percolation circuit assigns the relevance score of the child discourse constituent node to the parent discourse constituent node if the child discourse constituent node is more relevant than its parent;

for each coordinated discourse constituent node, the percolation circuit assigns the relevance score of the coordinated discourse constituent node to each preceding less relevant sibling node;

for each child discourse constituent node that is not a coordinated discourse constituent node and is not a subordinated discourse constituent node, the percolation circuit assigns the relevance score of the parent discourse constituent node to the child discourse constituent node if the parent discourse constituent is more relevant than the child;

for each coordinated discourse constituent node, the percolation circuit assigns the relevance score of the parent discourse constituent node to the coordinated discourse constituent node, if the coordinated discourse node and all its siblings are less relevant than the parent node;

for each subordinated discourse constituent node, the percolation circuit assigns the relevance score of the subordinated discourse constituent node to the subordinating discourse constituent if the subordinated discourse constituent is more relevant than the subordinating node; and

for each node, repeating these steps, until the percolation circuit can find no node whose relevance score is changed to the relevance score of another node.
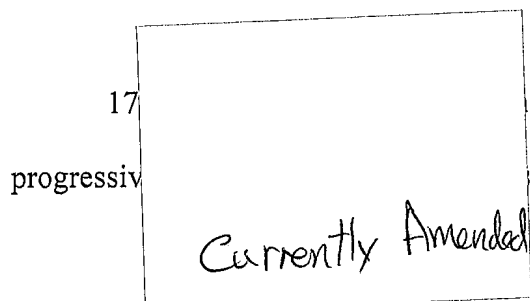
17.   of claim 16, wherein the percolation is applied to progressiv   .

Currently Amended

18.   (Previously Presented)   A system for determining hybrid text summaries comprising:

an input/output circuit for retrieving a text;

a processor for determining discourse constituents for the text and attaching the discourse constituents into a structural representation of discourse;

a relevance score determination circuit for determining relevance scores for the discourse

constituents based on at least one non-structural measure of relevance;

a percolation circuit for percolating discourse constituent relevance scores based on the

structural representation of discourse; wherein for each discourse constituent leaf node, the

percolation circuit determines the number of subordinated edges plus one and a score based on

the inverse of the number of subordinated edges +1;

for each discourse constituent node, the percolation circuit assigns the score of a child

discourse constituent node to the parent discourse constituent, if the score is less relevant;

for any subordination discourse constituent node, the percolation circuit assigns the score

of the subordinated discourse constituent node to the subordinating discourse constituent node if

the subordinated discourse constituent score is lower;

the percolation circuit assigns the scores of any coordination discourse constituent node

to each child discourse constituent of the coordination if it is lower; and

the processor determines an adjusted relevance score based on the score and the

subordination level; and

a hybrid text summary based on the discourse constituents with relevance scores

exceeding a threshold relevance score.

19.   (Currently Amended) The system of claim [[11]] _15_, wherein the processor

determines every leaf discourse constituent containing an anaphor;

for each anaphor, the processor determines any unique preceding referents for the

anaphor;

the processor substitutes the unique antecedent referent into the

preceding discourse constituent for the anaphor referent; and

the processor removes the preceding discourse containing the unique referent from the discourse constituents with relevance scores exceeding the threshold relevance score.

20.   (Currently Amended) The system of claim [[11]] _15_, the percolation circuit determines every leaf discourse constituent containing an anaphor;

for each anaphor, the percolation circuit determines any unique preceding referents for the anaphor;

the percolation circuit substitutes the unique antecedent referent into

the leaf discourse constituent for the anaphor;

the percolation circuit removes the discourse constituent containing the unique antecedent referent from the set of the discourse constituents with more relevant relevance scores.

21.   (Currently Amended) The system of claim [[11]] _15_, wherein the processor determines important discourse constituent nodes based on a non-structural measure of relevance;

determines unresolved referents in the important discourse constituents;

determines potential resolving discourse constituents with potential to resolve referents;

percolates relevance score of important discourse constituents through a reduced span of potential resolving discourse constituents; and

determines a reduced span of discourse constituents based on relevance score.

22.   (Original)   A carrier wave encoded to transmit a control program, useable to program a computer to determine hybrid text summary, to a device for executing the program, the control program comprising:

instructions for determining discourse constituents for a text;

instructions for determining a structural representation of discourse for the text;

instructions for determining relevance scores for discourse constituents based on at least one non-structural measure of relevance;

instructions for percolating relevance scores based on the structural representation of discourse;

instructions for determining a hybrid text summary based on discourse constituents with relevance scores compared to a threshold relevance score.

23.   (Original)   Computer readable storage medium comprising: computer readable program code embodied on the computer readable storage medium, the computer readable program code usable to program a computer to determine hybrid text summary comprising the steps of:

determining discourse constituents for a text;

determining a structural representation of discourse for the text;

determining relevance scores for discourse constituents based on at least one non-structural measure of relevance;

percolating relevance scores based on the structural representation of discourse;

determining a hybrid text summary based on discourse constituents with relevance scores compared to a threshold relevance score.

24 - 33.   (Canceled)

34.   (Original) The method of claim 8, further comprising the steps of:

determining a combined relevance score based on the relevance scores and non-structural

relevance scores and percolating the combined relevance score.

35.   (Original) The system of claim 18, the relevance circuit determines combined

relevance score based on the relevance scores and non-structural relevance scores and

percolating the combined relevance score.

36.   (Original) A hybrid text summarization system comprising:

means for determining discourse constituents for a text;

means for determining a structural representation of discourse for the text;

means for determining relevance scores for discourse constituents based on at least one

non-structural measure of relevance;

means for percolating relevance scores based on the structural representation of

discourse; and

means for determining a hybrid text summary based on discourse constituents with

relevance scores compared to a threshold relevance score.

37.   (Previously Presented) A hybrid text summarization system comprising:

means for determining discourse constituents for a text;

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means for determining a structural representation of discourse for the text;

means for determining relevance scores for discourse constituents;

means for percolating relevance scores based on the structural representation of discourse comprising the steps of:

means for each discourse constituent leaf node, determining the number of subordinated edges plus one;

means for determining a score based on the inverse of the number of subordinated edges +1;

means for each discourse constituent node, assigning the score of a child discourse constituent node to the parent discourse constituent node, if the score is less relevant;

means for any subordination discourse constituent node, assigning the score of the subordinated discourse constituent node to the subordinating discourse constituent node if the subordinated discourse constituent score is lower;

means for assigning the relevance scores of any coordination discourse constituent node to each child discourse constituent of the coordination if it is lower;

means for determining an adjusted relevance score based on the score and the subordination level; and

means for determining a hybrid text summary based on discourse constituents with relevance scores compared to a threshold relevance score.

38 - 39.   (Canceled)